

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Withdrawn) A method for producing retinal nerve cells, the method comprising the steps of:
co-culturing embryonic retinal stem cells and iris pigmented epithelial cells; and
inducing differentiation of the iris pigmented epithelial cells into the retinal nerve cells.
2. (Withdrawn) The method according to Claim 1, wherein the iris pigmented epithelial cells are derived from a mammal.
3. (Withdrawn) The method according to Claim 1, wherein the embryonic retinal stem cells are derived from a bird.
4. (Withdrawn) The method according to Claim 1, wherein the iris pigmented epithelial cells are isolated from an eyeball and then selectively cultured by a floated coagulated mass culturing technique.
5. (Withdrawn) The method according to Claim 1, wherein the isolating of the iris pigmented epithelial cells includes:
an iris-tissue-extirpating step of extirpating iris tissue from the eyeball; and
an iris-pigmented-epithelium-separating step of separating an iris pigmented epithelium from the iris tissue thus extirpated.
6. (Withdrawn) Retinal nerve cells obtained by a method according to Claim 1.
7. (Currently amended) A method for producing rhodopsin-positive retinal nerve cells, the method comprising the steps of:
isolating iris pigmented epithelial cells from an eyeball; and
selectively culturing the iris pigmented epithelial cells isolated from the eyeball by a floated coagulated mass culturing technique; and

performing adherent culturing of the iris pigmented epithelial cells obtained in the selectively culturing step with a serum-free culture medium so as to induce differentiation of the iris pigmented epithelial cells into the rhodopsin-positive retinal nerve cells, the iris pigmented epithelial cells not being subjected to a gene transfer, the serum-free culture medium ~~when the adherent culturing starts~~ containing at least one of a fibroblast growth factor 2, a fibroblast growth factor 9, and a ciliary neurotrophic factor with a concentration in a range of 1 to 100 ng/mL, the iris pigmented epithelial cells in the serum-free culture medium when the adherent culturing starts having a cell density of 1×10^5 cells/cm² or less, the serum-free culture medium being a DMEM/F12 culture medium, a DMEM culture medium, or an EMEM culture medium.

8. (Previously presented) The method according to claim 7, wherein the iris pigmented epithelial cells are derived from a bird or a mammal.

9. (Cancelled)

10. (Cancelled)

11. (Withdrawn) A method for producing retinal nerve cells, the method comprising the steps of:

isolating iris pigmented epithelial cells from an eyeball;

starting adherent culturing by implanting the iris pigmented epithelial cells in a culture medium containing FGF2 and/or FGF9; and

after the step of starting the adherent culturing, inducing differentiation of the iris pigmented epithelial cells into the retinal nerve cells by performing the adherent culturing of the iris pigmented epithelial cells by using the culture medium to which CNTF is added and from which FGF2 and/or FGF9 is removed.

12. (Withdrawn) The method according to Claim 11, wherein when the culture medium is a serum-free culture medium in the step of starting the adherent culturing, a serum is further added to the culture medium in the step of inducing the differentiation into the retinal nerve cells.

13. (Withdrawn) Retinal nerve cells obtained by a method according to Claim 7.

14. (Withdrawn) Retinal nerve cells obtained by a method according to Claim 11.

15. (New) The method according to claim 7, wherein the fibroblast growth factor 2 and the fibroblast growth factor 9 stop being added after two to five days from the start of the adherent culturing, and the ciliary neurotrophic factor is continuously added from the start of the adherent culturing to the end of the adherent culturing.

16. (New) The method according to claim 7, wherein the iris pigmented epithelial cells are derived from an adult mammal.